Volunteer Lake Assessment Program Individual Lake Reports

THORNDIKE POND, JAFFREY, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	2,560	**Max. Depth (m):**	7	**Flushing Rate (yr^{1})**	1.7
Surface Area (Ac.):	265	**Mean Depth (m):**	3.4	**P Retention Coef:**	0.64
Shore Length (m):	6,000	**Volume (m^{3}):**	3,513,500	**Elevation (ft):**	1159

TROPHIC CLASSIFICATION

Year	Trophic class
1998	OLIGOTROPHIC
2009	OLIGOTROPHIC

KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

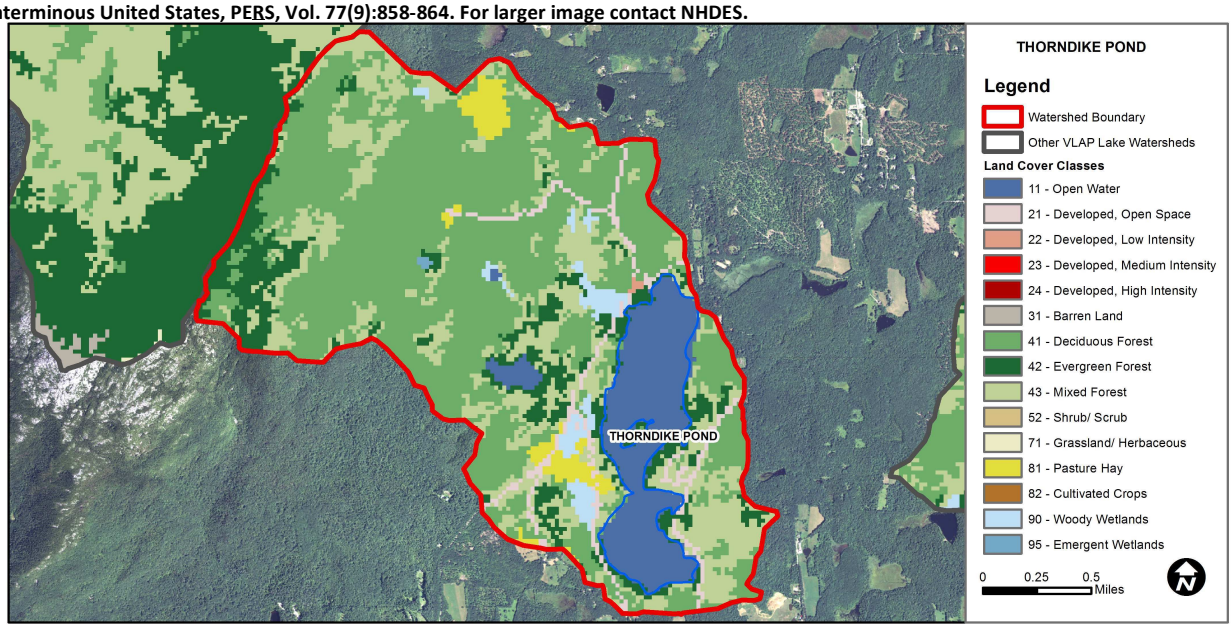
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	>/=5 samples and median is >threshold.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	Chlorophyll-a	Slightly Bad	>5 samples and median is > threshold.
Primary Contact Recreation	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

THORNDIKE POND - CAMP WANOCKSETT BEACH	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.
THORNDIKE POND - CAMP WA-KLO BEACH	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.
THORNDIKE POND - TOWN BEACH	E. coli	Bad	>/=1 exceedance(s) of geometric mean criterion and/or >/=2 exceedances of single sample criterion, with 1 or more >2X criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	11.1	Barren Land	0	Grassland/Herbaceous	0
Developed-Open Space	3.08	Deciduous Forest	49.8	Pasture Hay	2.55
Developed-Low Intensity	0.08	Evergreen Forest	10.06	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	21.11	Woody Wetlands	2.07
Developed-High Intensity	0	Shrub-Scrub	0	Emergent Wetlands	0.08

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
THORNDIKE POND, JAFFREY, NH
2012 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphic)*

- **CHLOROPHYLL-A:** Chlorophyll levels were low throughout the summer, decreased from 2011 and were below the NH lake median. Historical trend analysis indicates chlorophyll levels tend to fluctuate from year to year.
- **CONDUCTIVITY/CHLORIDE:** Conductivity and chloride were low at all stations.
- **TOTAL PHOSPHORUS:** Deep spot phosphorus levels were low throughout the summer and less than the NH lake median. Historical trend analysis indicates the epilimnetic (upper water layer) phosphorus tends to fluctuate from year to year. South West Inlet phosphorus was slightly elevated in July potentially due to agricultural activities upstream and flushing from a recent rain event.
- **TRANSPARENCY:** Transparency improved as the summer progressed, was greater than 2011 and the NH lake median. Historical trend analysis indicates transparency fluctuates from year to year.
- **TURBIDITY:** Turbidity levels were relatively low at all stations throughout the summer.
- **PH:** pH levels tend to be lower than desirable.
- **RECOMMENDED ACTIONS:** Bracket South West Inlet upstream to determine potential impacts of agricultural activities. Keep up the great work!

Dissolved Oxygen & Temperature Profile

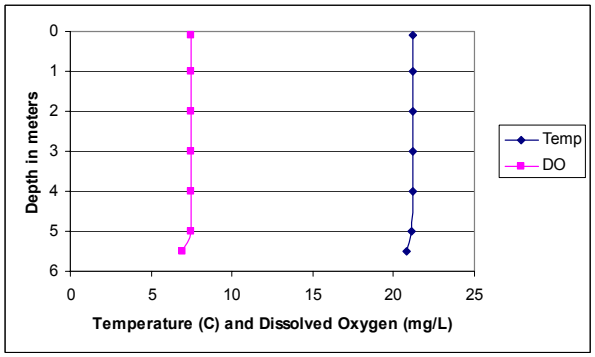


Table 1. 2012 Average Water Quality Data for THORNDIKE POND

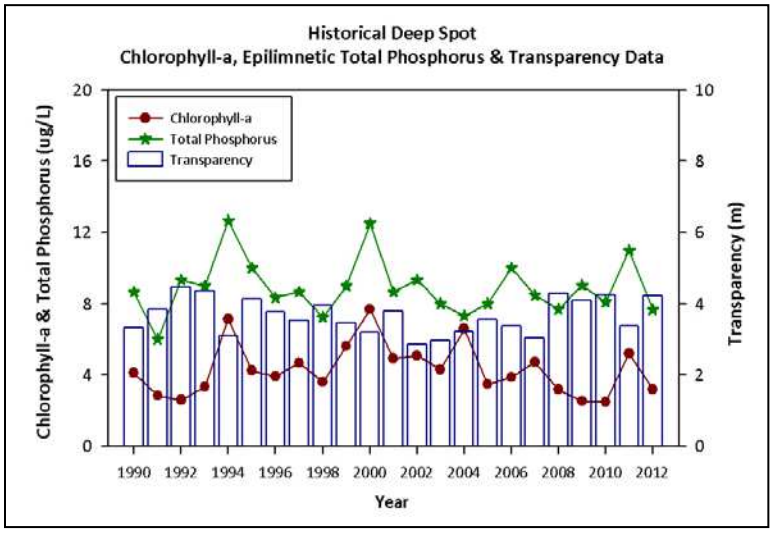
Station Name	Alk.	Chlor-a	Chloride	Cond.	Total P	Trans.		Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	ug/l	m		ntu	
						NVS	VS		
Deep Epilimnion	2.13	3.19	4	34	8	4.23	4.32	1.06	6.5
Deep Hypolimnion				34	7			1.22	6.46
North West Inlet				29	9			1.31	6.13
Outlet				32	10			0.87	6.28
South West Inlet				38	15			1.31	6.13

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.
Transparency	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.
Phosphorus (epilimnion)	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.



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